

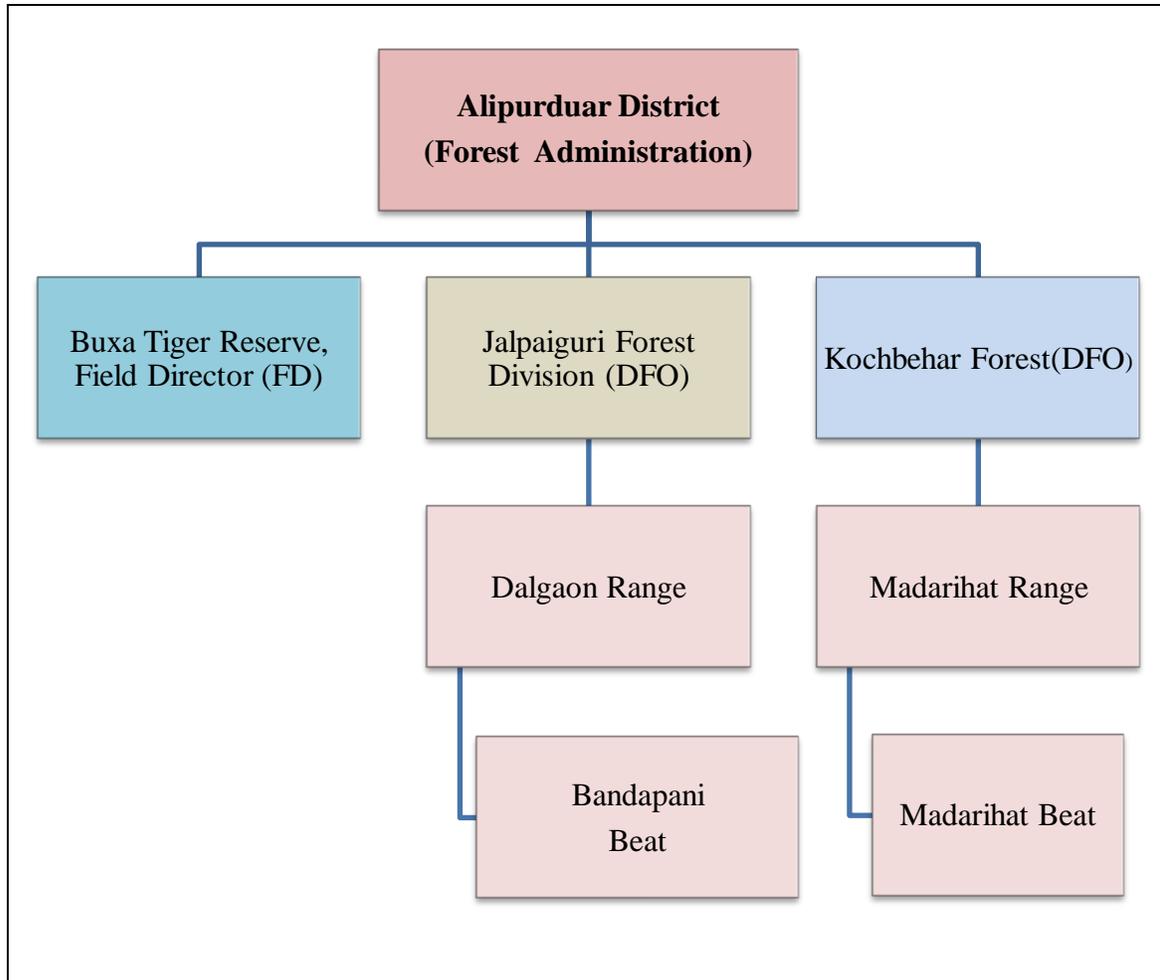
## CHAPTER - 3

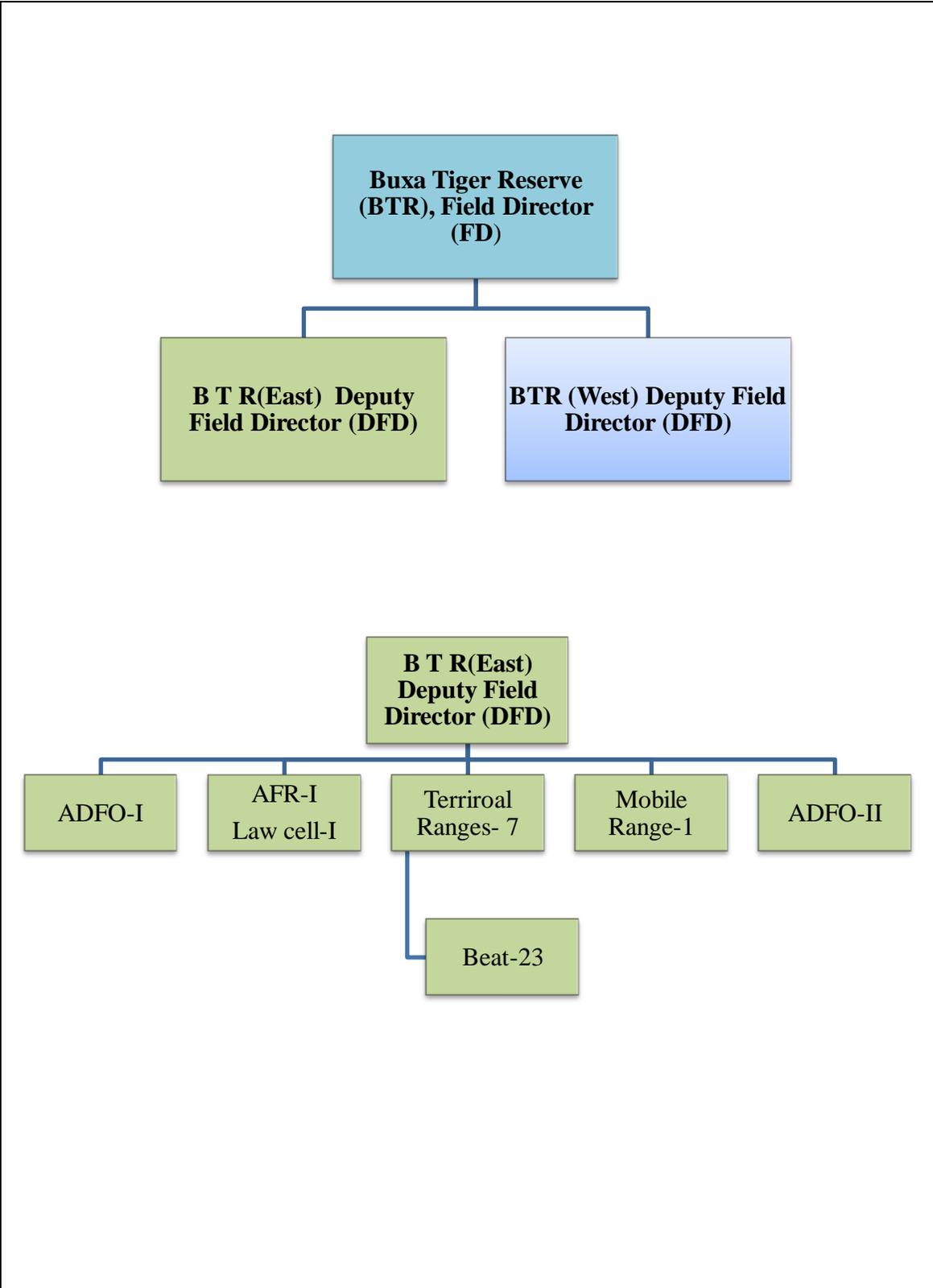
### Forest Profile and Forest Villages

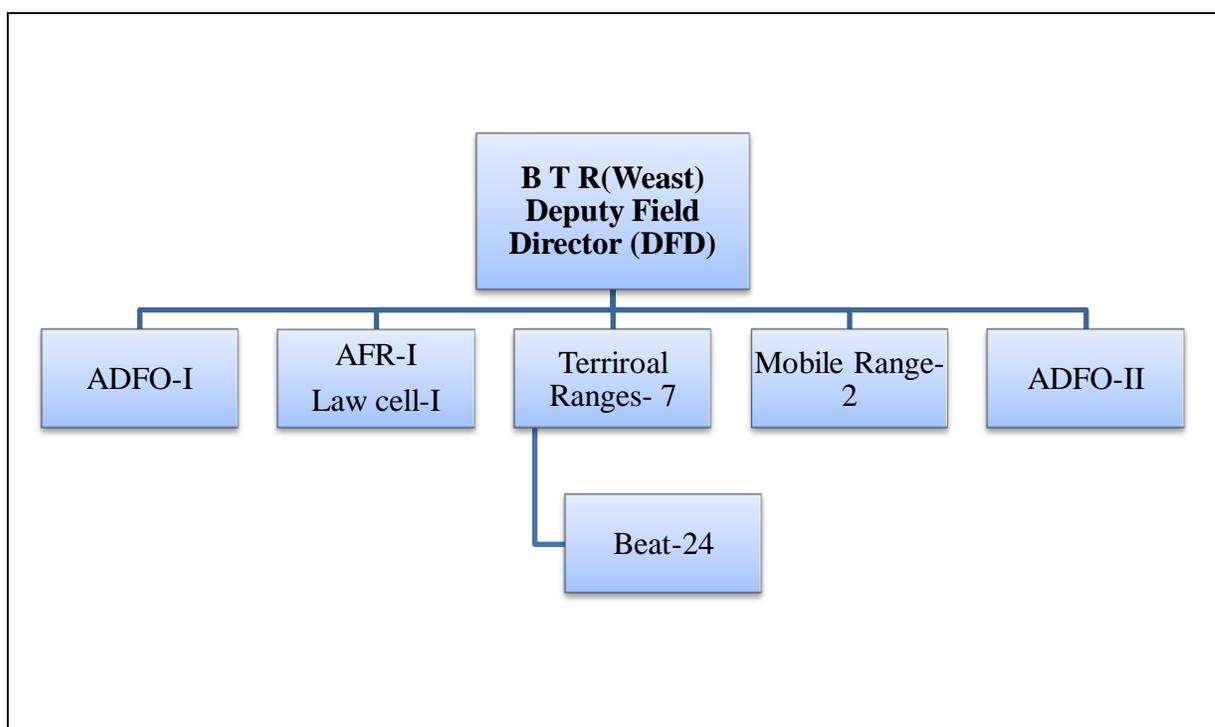
#### 3.1 Administrative setup of forest

The administrative set up of forests of Alipurduar District consists of three division viz. Buxa Tiger Reserve (under Field Director), Jalpaiguri Forest Division (under Divisional Forest Officer) and Koch Behar Forest Division (under Divisional Forest Officer). The Districts' maximum part of forest area under the Buxa Tiger Reserve (BTR), and it is controlled by Field Director, BTR. Only Dalgaon range and Madarihat range belongs to the Jalpaiguri and Koch Behar Forest Division respectively. Other details of administrative setup are given in the chart 3.1 and table 3.1 below.

**Chart 3.1** Administrative Structure of Forest Department, Alipurduar District.







Source: State Forest Report, 2012-2013 & Tiger conservation plan,  
2016-17 to 2026-2027.

The administrative setup of the Buxa Tiger Reserve (BTR) is based on the erstwhile Buxa Division. This came under the control of Field Director, BTR on 27-04-1992. As per reorganization vide Govt. Order No. 4983-for dated Calcutta, 25<sup>th</sup> September 1995 (Das, 2000), the entire area of BTR has come under the control of BTR (East) and BTR (West) division headed by two Field Director (FD) with separate jurisdiction. The overall control of the entire project lies under the Field Director and Conservator of Forests BTR (chart-1). The Headquarter of the two Field Directors is at Alipurduar town. The Field Director of the forest is assisted by two Deputy Field Director (DFD). The following is the present administrative set up in field level. The details of forests divisions, ranges, beats, components with area of beats are given below in the table 3.1.

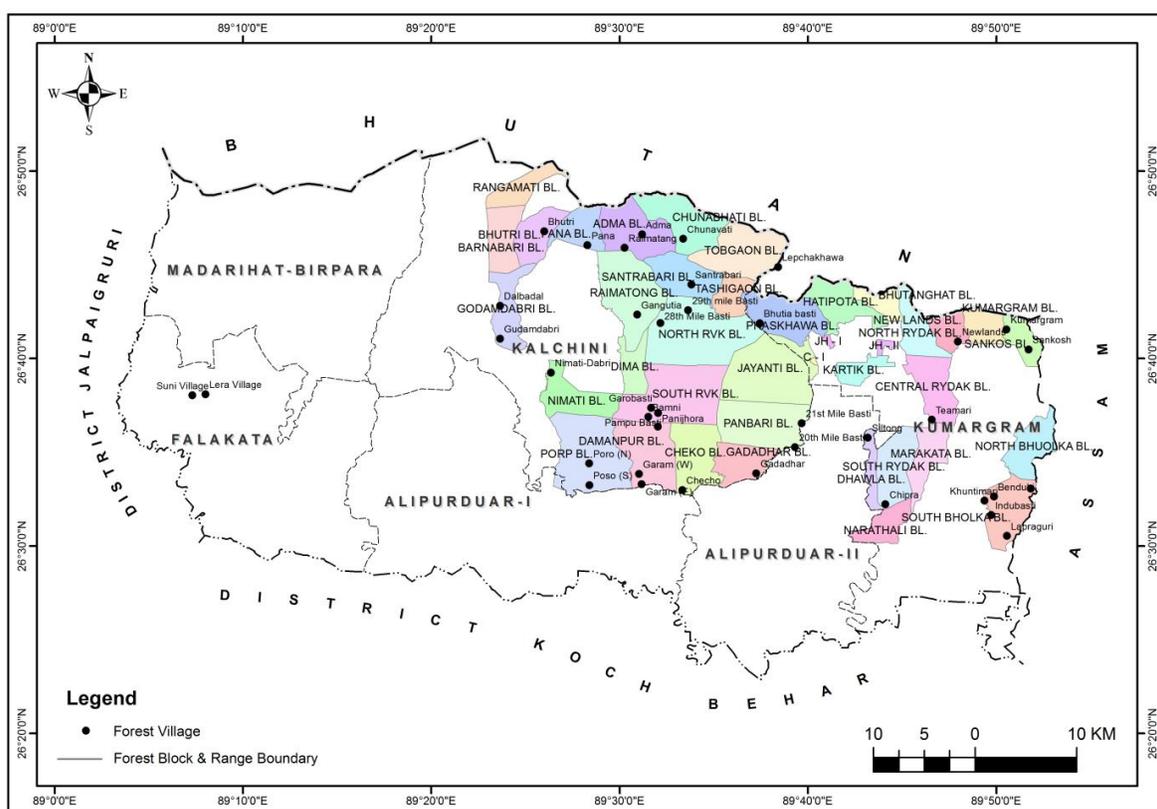
**Table 3.1** Forest Division, Range, Beat and Components of Beats with Area.

Division	Range	Beats	Components (Division)	Area (Ha)
Jalpaiguri Forest Division (DFO)	Dalgaon	1. Dalgaon 2. Bandapani 3. Dalmore	-	2069.87
Kochbehar Forest Division	Madarihat	1. Madarihat	-	

(DFO)				
Buxa Tiger Reserve ( BTR), East	Kumargram	1. Sankosh	SNK-1, 2, 3	1105.17
		2. Kumargram	KGM-1, 2	1051.37
		3. Newlands	NLS-1, 2; NLS - USF	942.42
	Bholka	1. Barobisha	SBH-5, 6; D. Rampur-PF	688.47
		2. Ghoramara	SBH-1, 2b, 3a, 4	1201.94
		3. Balapara	SBH- 2a, 3b, NBH-5	805.62
		4. Chengmari	NBH- 1, 2, 3, 4; M- Haldibari- PF	1133.2
	South Rydak	1. Narathali	NTR-1, 2	1288.12
		2. Marakata	MKT-1, 2, 3, 4	1352.04
		3. S. Rydak	SRD -1, 2, 3, 4; DH-1, 2	1858.38
		4. Chipra	SRD -5, 6, 7; DH- 3	1146.92
	North Rydak	1. Karthika	KRT- P.F, KRT- USF, Rahimabad- PF, Rydak- USF, Loknathpur- PF; C-J-II	815.37
		2. Mainabari	BGT-1, 2; NRD -1,2,3; CRD-1, 2; Turturi-PF; J.H-II; T-Khanda	3511.95
		3. Tiamari	CRD -3, 4, 5, 6; U. Rampur - PF	1297.26
		4. Hatipota	HP-1, 2; J-H-1	1745.67
	Jainti	1. S. Jainti	JNT-3, 4, 5, 6, 7, 8, 9; C- Jhora- I	3393.02
		2. N. Jainti	NRVK- 6, 7, 12, 13, 14; JNT-1, 2	2397.58
		3. Phashkwa	Tashigaon-1, 2; NRVK-5	1717.99
		4. Bhutia Basti	PHK-1, 2, 3; PHK- RF	2735.80
	Buxaduar	1. Santalabari	STB -1, 2, 3, 4	2299.85
		2. Buxa Road	NRVK -1, 2, 3, 4	1219.33
		3. Chunabhati	CNBT-1, 2, 3	2001.58
		4. Buxaduar	Tobgaon -1, 2, 3, 4	3135.95
	Buxa Tiger Reserve ( BTR), West	Damanpur East	1. Damanpur	DPO - 3, 4, 7, 8
2. Checko			Checko -3, 4, 5, 6, 7, 8, 9	1751.12
3. Gadadhar			Gada -1, 2, 3, 4, 5, 6	1433.86
Damanpur West		1. Garam (East)	DPO -1, 2, 5, 6, 9	2419.17
		2. Garam (West)	Poro - 3, 8, 9	1077.67
		3. Poro ( East)	Poro -2, 7, 10; Phoskadanga - PF	920.27
Rajabhatkawa East		1. Panabari (South)	Pan – 6, 7, 8, 9, 10	1573.10
		2. Panbari (North)	Pan -1, 2, 3, 4, 5	1599.28
		3. SRVK	SRVK - 11, 12, 13, 14	984.38
Rajabhatkawa West		1. WRVK	SRVK -7, 8, 9, 10, 15, 16	2470.70
		2. NRVK	SRVK-1, 2; NRVK- 10, 11, 15, 16	1986.68
		3. CRVK	SRVK- 3, 4, 5, 6	1252.27
		4. Dima	Dima -1, 2, 3, 4; Dima - RF	1081.25
Nimati		1. Nimati (East)	Nimati -3,4,5,6	1170.78
	2. Nimati (West)	Nimati -1,2,7	1189.01	

		3. Poro (West)	Poro -1, 5, 6, 11; Nimti-Domohani- PF	1366.90
	Hamiltongunj	1. Gudamdabri	GDB -1, 2, 3, 4	1613.42
		2. Bharnabari	BNB -1, 2, 3, 4	1685.44
		3. Rangamati	RMT-1, 2, 3; RMT-Extn.	1017.49
		4. Bhutri	Bhutri -1, 2, 3, 4, 5	1526.62
	Pana	1. Pana	Pana -1, 2, 3, 4	1336.66
		2. Gangutia	RTG -6, 7, 8, 9, 10	1542.26
		3. Raimatang	RTG -1, 2, 3, 4, 5	1962.00
		4. Adma	Adma -1, 2, 3, 4, 5	2507.44

Source: 9<sup>th</sup> Working plan of Jalpaiguri Forest Division, vol. 1, 2008-09 & Tiger conservation plan, 2016-17 to 2026-2027



**Figure 3.1** Division of forest blocks and ranges, Alipurduar District.

### 3.2 Forest coverage

The forests of the Alipurduar District belongs to four forest divisions which are Buxa Tiger Reserve (East), Buxa Tiger Reserve (West), Jalpaiguri Forest Division and Kochbehar Forest Division. It cover an area of 1162.76 sq. km and are situated entirely in the Duars between west of Madarihat block to Sankosh river in the east of Kumargram block (State Forest Report, 2012-

2013). All the forests are plain forest, exception Buxa forests which occupies foot hilly ground rising rapidly from 150 meter to 1000 meter. The table no.3.2 showed the area of Alinagar forests which is covered 6.4146 sq. km, Jaldapara wild life sanctuary 220.249 sq. km, Buxa 721.659 sq. km, Rydak 35.5018 sq. km, Dalgaon 78.1529 sq. km, Titi 63.1041 sq.km, Dalmore 17.2549 sq.km, and Dhumpara-Bhalka 29.3241 sq.km. In percentage (Table 3.2) highest forests cover is found in the Buxa wild life sanctuary (61.59 %), other followers are Jaldapara WLS (18.79 %), Dalgaon (6.68 %), and Titi forest (5.39 %), Rydak (3.03 %) and so on. To take necessary administrative works of forest in the District, all together there are sixteen (16) forest range office within that District, these are Buxaduar, Hatipota, Jainti, North Rydak, South Rydak, Bhokla, Kumargram, Hamiltonganj, Pana, Nimti, West Dananpur, East Damanpur, East Rajabhatkhawa, West Rajabhatkhawa, Madarihat and Dalgaon.

**Table 3.2** Forest area of Alipurduar District.

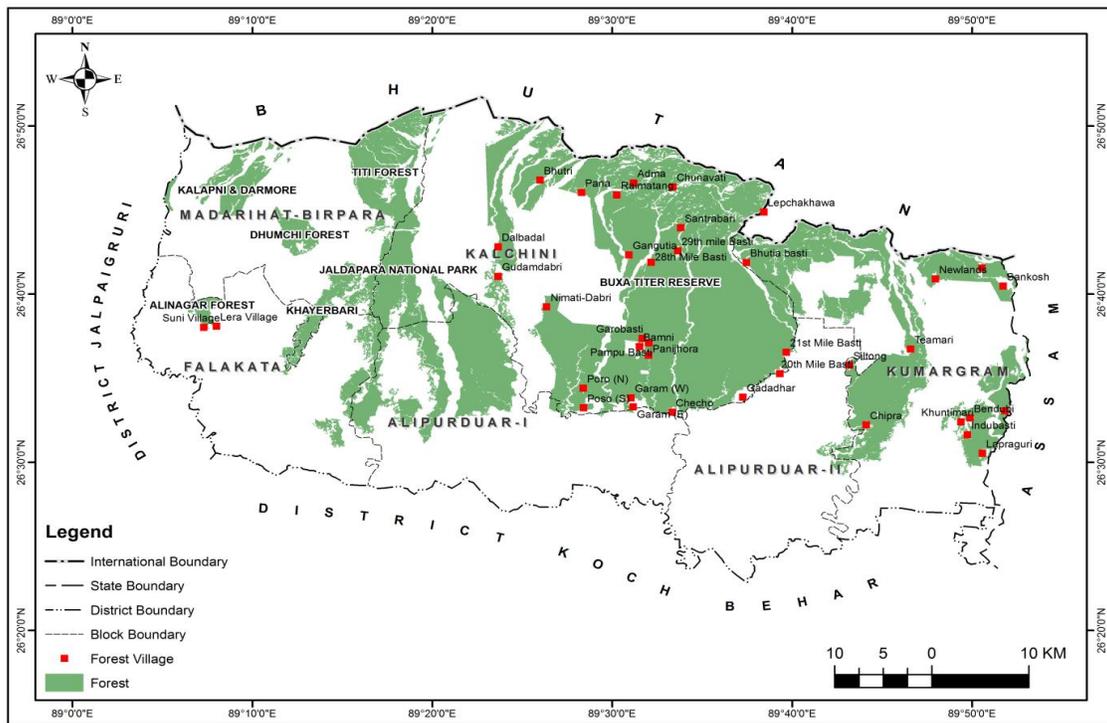
Sl. No.	Name of the forest	Area (sq.km)	Percentage
1	Alinagar	6.4146	0.55
2	Jaldapara WLS	220.249	18.79
3	Buxa Tiger Reserve	721.659	61.59
4	Rydak	35.5018	3.03
5	Dalgaon	78.1529	6.68
6	Titi	63.1041	5.39
7	Dalmore	17.2549	1.47
8	Dhumpara & Bhalka	29.3241	2.50
<b>Total</b>		<b>1171.66</b>	<b>100</b>

Source: Google Earth Image, 2017, area calculated by using Arc GIS

### 3.3 Forest villages

By definition, forest villages does not mean the villages situated in the forest, but means such colony of collies or villages or labours settled by the Forest Department for maintenance of assured supply of labour required in forest works done departmentally (Sinha, 1987). In 1894 cultivators were first allowed to settle in the forest in connection with the scheme of taungya sowings. About 1904 establishment of forest villages became a regular policy and very large numbers of forest villagers were allowed to settle in the forest. Forest villagers were found very useful for undertaking cultural operations in the forest and also for fire protection purpose. Initially there was no sufficient control over the amount of land, a villager might cultivate and number of cattle they might keep (Ninth working plan of Jalpaiguri Forest Division, vol. I, 2009). In 1912 rules were made to limiting the cultivation and homestead land to 2.5 acres in

plains, and 1.5 acres in hills per family. Each household was allowed to keep not more than two (2) plough cattle, two (2) milk cow and four (4) calves; two (2) got/ sheep may be allowed provided that they are always stall feed (Das, 2000). As a result of this restriction all the undesirable villagers left but the useful villagers in nearly all cases returned shortly agreeing to abide by the rules. This has to be read with the definition of ‘forest village’ given in section 2(f): According to the Forests Rights Act 2006 (FRA), 2(f) forest village means the settlements which have been settled inside the forest by the Forest Department of any State Government for forestry activities or which were shifted into forest villages through the forest reservation process and includes fixed demand holdings, forest settlement villages, all types of taungya settlements, by whatever name called, for such villages and includes lands for cultivation and other uses, allowed by the Government (Sarin and Springate, 2010).



**Figure 3.2** Location of forest villages of Alipurduar District.

At present there are 39 forest villages existing in this District with a total strength of 2948 families of which 1011 are agreement holder. These forest villagers are looked after by the forest village development division created in 1988 with HQ at Jalpaiguri (Das, 2000). The forest villagers have been provided with wooden departmental quarters in most cases. Constructions of wooden huts have been started from the year 1947-48 and have continued till 1960-61. Further welfare measures have been undertaken in the forest villages by providing ring wells,

construction of pipelines for supply of water and also by providing primary schools and teachers' quarters to cater to the requirement of forests villagers. Forest villages come under the panchayet system from 1998 through tiger reserve provides villagers with amenities through Joint Forest Management system. Forest villagers cultivate their land and rare large number of cattle. Reduction in forest harvesting, extent of creation and maintenance of plantations meant substantial reduction in employment of both forest villagers and fringe villagers.

**Table 3.3** Name and location of forest villages within Alipurduar District.

Name of Forest Division	Range office	Beat office	Forest village	Population				
				1991	2001	2011		
Jalpaiguri Forest Division	Dalgaon range	Bandapani	Lehra village	104	122	145		
			Suni village	154	182	207		
Buxa Tiger Reserve, West Division	West Rajabhatkhowa	West Rajabhatkhowa	Garobasti	752	911	1129		
			Pumpu Basti	190	215	243		
			Bamni Bstati	84	102	122		
	East Damanpur	Gadhadhar	Gadhadhar	Gadhadhar	1125	1279	1436	
				Damanpur	Panijhora	210	247	276
				Checko	Kalkut	702	842	997
	West Damanpur	East Poro	East Poro	Poro (N)	643	776	934	
				Poro (S)	428	513	627	
			Garam (West)	Garam (West)	375	483	591	
			Garam (East)	Garam (East)	605	722	876	
	Nimati	West Poro	Nimati &Dabri	590	696	798		
	Pana	Gangutia	Gangutia	Gangutia	383	443	523	
				Adma	Adma	298	349	413
				Raimatang	Raimatang	409	489	578
				Pana	Pana	446	548	671
	Hamiltonganj	Bhutri	Bhutri basti	Bhutri basti	251	223	258	
				Gudamdabri	Gudamdabri	867	971	1102
Dalbada				Dalbada	152	174	202	
East Rajabhatkhowa	Panabari (S)	20 <sup>th</sup> Mile	20 <sup>th</sup> Mile	200	226	261		
			Panabari (N)	21 <sup>st</sup> Mile	133	163	203	
Buxa Tiger Reserve, East Division	Jainty (south)	Bhutiabasti	Bhutiabasti	415	389	279		
	Kumargram	Sankosh	Sankosh	602	697	792		
			Newlands	165	198	246		
			Kumargram	Kumargram	401	479	594	
	Bholka	Balapara	Balapara	Balapara	216	261	317	
				Ghoramara	Khutimari	251	307	364
					Bengdoba	201	274	354
					Indu basti	177	219	267
				Barobhisa	Lapraguri	276	342	397
	North Rydak	Teamari	Teamari	182	213	265		
	South Rydak	South Rydak	Shiltong	Shiltong	383	445	509	
				Chipra	Chipra	225	297	387
	Buxaduar	BDR road	28 <sup>th</sup> Mile	28 <sup>th</sup> Mile	300	377	472	
				29 <sup>th</sup> Mile	126	173	238	
Lepchakhawa				300	349	401		
Chunabati			Chunabati	274	316	359		
Santrabari			Santrabari	339	403	497		

Source: Census of India, 2001, 2011

### **3.3.1 Ethnic identities of forest villagers**

A substantial proportion of the population comprises of scheduled tribes (ST) such as Rava, Mechia, Garo, Santal, Nepali, Bhutia, Oraon etc. are the prime community. Nepali and Santhal community is proportionally higher among all forest villagers. Villagers live in complete communal harmony. Relationship of villagers within their own community and with other community is good. They marry socially although love marriage is also allowed within the society. They generally arrange their marriage within the same community. Durga puja, Shyama puja, Saraswati puja etc. are the festival of villagers who are Hindu; and Christmas is the main festival among Christians. All communities are living peacefully and help one another; and gathered to help for social activities such as marriage and other social ceremony each other. The tribal population includes mainly Rava, Mechia, Oraon, and Madeshia on southern and comparatively low height area, Dukpas/ Bhutia tribes are lived on extreme north hill of Buxa and Nepalese are scattered all around. There are good numbers of Bangali too live in the proximity of the forest villages (table 3.4).

#### **3.3.1.1 Rava**

The Ravas are believed to enter into the Alipurduar District of West Bengal from china through Tibet and Burma. Their language is Bhot-Burmese. They also belong to mongoloid. The Ravas are divided into different clans, such as Koch, Bongdania, Mytori, Dhahuripati, Bitliya, Hema, Sanga, Totla and Madahi. 'The Ravas living in Jalpaiguri are mostly Koches' (Roy, 2010). The mother has the highest respect in the society. The Ravas of this District are economically very poor and lived inside or fringe area of forest. They have very small quantity of land who is agreement holder with Forest Department and others are landless. The Rava women are good weavers of handloom. Their taste of colour combination is praiseworthy. Their bamboo made handloom instruments are attractive. These instruments are traditional and with the help of these they weave lufun, kambang, faakcheck, soloylone, kalai etc. (Kar, 2003). They are making traditional cloths for their own use. The culture of the Ravas is full of variety. They like to sing and dance together and especially women take part in dancing with the traditional musical instruments. The Ravas worship Kamakhsha Devi during Ambubachi. They sacrifice bamboo to goddess Kamaksha.

### **3.3.1.2 Garo**

The Garos of the North Bengal are chiefly concentrated in Kochbihar, Alipurduar and Jalpaiguri District. Linguistically the Garos belong to the Bodo group, and there seem good grounds for supporting that their members of the great Tibeto-Burman race (Allen, Gait, Allen & Howard, 2001). They belongs to Mongoloid group and are divided into different sub castes such as; Dedoi, Champek, Maji, Uni, Lokbok, Banda, Kama etc. A man and woman of the same caste cannot marry and for that one caste must marry into another caste. Relationship is traced in the female line. The main food of the Garos is rice. Fish of every kind is eaten; also flesh of pig, deer, goat, ducks, fowls, and pigeons. Large grasshoppers and locusts are also their food. Vegetables of all kinds are eaten. Men wear a cotton dhoti called gumcha and a coat to cover their bodies called bukhchili; others are pagga, kalai, lofoon, kambang etc. which are used to cover different parts of the body both of male and female.

The chief deity of the Garos is Rishi. Juggo is said to be the husband of Rishi, and is also worshiped. In the month of March and April a new bamboo is cut and planted in the courtyard to represent Rishi, in order that the house or village may be safe from enemies, fire, sickness and other troubles. The bamboo is called Sirfak. Rishi is said to eat flesh of pig and fowls. She also drinks liquor called chokot. Juggo eats no flesh; but drinks liquor (Kar, 2003). They are cultivating cotton, bhadoi paddy, mustard seed, a little tobacco of inferior quality, brinjals, chillies, cucumbers, and melons called bangi. Fish are caught in small streams which are blocked up and the water is poisoned with various articles. To capture fish in streams they used bamboo traps called Dingir, Dhoska, Darika and Burung also used long fishing net called kheolic-hek and bamboo trap called pallao.

### **3.3.1.3 Santal**

The santals are an important tribe in forest and tea belt area of the Alipurduar District. They descend from the pre-Dravidian who migrated to the regions of Jharkhand, Chhattisgarh, and Orissa. The Santals were made their way into the North Bengal as tea garden coolies and in 1901 they numbered 10,857 (Grunning, 1911). They were used for the purpose of opening out land in the terai for tea (Dash, 1947). They have some clans among which Hansdak, Murmu, Hembrom, Soren, Kisku, Tudu, Besra, Bedea etc are found. The Santal culture has attracted many scholars and anthropologists for decades. This culture is depicted in the paintings and art works in the walls of their houses. They love traditional music and dance. Like other Indian ethnic groups,

their culture has been influenced by mainstream Indian and Western culture. In spite of that their traditional music and dance still remain in the society. Santhals believe in supernatural beings and ancestral spirits. The society is devoid of caste hierarchy and therefore, the Santal's is casteless society. In their language marriage is called Bapla. There are different forms of marriage among the couples, such as Raibar Bapla, Sanga Bapla, Kudam Bapla, Tunki Dipil Bapla etc. They have separate religion and it is called 'Sarna'. Image or idol worship is absent and there is no as such traditional temple that exists in Santal society.

#### **3.3.1.4 Mechia**

The Meches of the Alipurduar District is close to the Bodos and the Kacharies of Assam. They are probably the original inhabitants of the Darjeeling Terai, and are a distinctly Mongolian race, with fair skins and large bones and limbs' (Grunning, 1911). The river Mechi in the India and Nepal border area is named after the Meches as per the opinions of some scholars. The Meches are known as good hunter and cultivator also love to live in forest and fringe areas. Among Mechia, Batho Puja is famous and it is celebrated during the month of Baisakh. Batho is a male God and his wife Mainas is a goddess of wealth of them. This puja is done whole of the month of Baisakh to please God. Bihu- mainly Baisakhi bihu is celebrated on 1<sup>st</sup> day of Baisakh. Drinking of local made liquor is common which they called 'Bokha-Jao' and it is winter drink (Kar, 2003). They have liquor called 'Hasa-Jao' which is drunk only during the summer. Some other community who lived among them also suffers from this practice.

#### **3.3.1.5 Nepali**

Nepalese are the dominant ethnic group in the hilly tracts of Duars. They hail from different castes and dialect groups like the Gurungs, the Mangars, the Limbus, the Tamangs, the Khas or Chettri, the Newars, the Subbas, the Muramis, the Sherpa, the Kamis, the Damai etc. Various castes and tribes that immigrated to the area during the 18<sup>th</sup> and 19<sup>th</sup> century from Nepal are submerged under this group. Today they are permanent settlers inside the forest or tea garden areas. Gurungs are innocence, simple mindedness. The khas are the Nepali Brahmins who have a large admixture of Aryan blood. Muramis are a Mongolian or semi Mongolian caste who has been modified by intermixture with Nepalese races (Malley, 1907). Sherpa, Tamang came from Tibet and followed Tibetan language and Buddhism religion. Limbus, Gurungs, Gorkhas, Mangars are lower caste among Nepalese. Most of them follow Buddhism as their major

religion, but Christian and Hinduism also found among them. At present they engage in agriculture, trade, labour and other activities. They love music, specially drink of liquor in any kind of festivals.

### **3.3.1.6 Bhutia**

Bhutias live in Chunabati and Buxa areas of Alipurduar District. The word Bhutia signifies an inhabitants of Bhot or Tibet; Bhot is the Sanskrit form of Bod, which is the native name of Tibet, and Bhutia means the end of Bhot. The Sanskritic speaking peoples of India consequently call the inhabitants of Tibet and Bhutan, 'Bhutias' (Grunning, 1911). The Bhutias or Dukpas, as they are called, belonged to the country known as Bhutan. The number of tall men among them is very few; but all are very robust as compared with the people of the plains. The main foods are rice, pork, beef, fowls, deer, marua, fish, both dried and fresh and vegetables of all sorts. Tea is a favourite drink of this society and taken it frequently during whole of the day. But it is never drunk or served without some eatable food. Rice-beer, called arra or biachang, is prepared by the Bhutias for feasts and religious ceremonies. The old and young, men and women drink liquor. The women wear a long cloak with loose sleeves called kira or moki and men wear a loose woolen, or cotton, or endi silk coat called KO. The Bhutia people are Buddhist, and generally confine themselves to repeating the words Om-Mani-Padine-Hom (Kar, 2003). There is no marriage ceremony among the Bhutias. The houses of are built on stone walls, wooden, as also on posts and are from 8 to 10 feet off the ground. The domestic animals found in the houses are pig, they called phup; fowls, dogs, cows, ponies and cats.

### **3.3.1.7 Oraon**

The Oraons are spread over the tea belt and forest belt of this study area. According to the historical report they have been transmigrated from middle India as well as from Bihar and Orissa towards the middle of 19<sup>th</sup> century, with the establishment of tea gardens in Duars (Kar, 2003). The history of the Oraons belongs to properly to the Ranchi District, from which most of them came up to the tea gardens. They converse with each other in kurukh, a popular language. It belongs to the Dravidian family group and has got a close relation with other languages including Brahui and Paharia (Ghosh, 2003). Oraon tribes are religious minded mostly following the customs of Hinduism, but many Oraons are today Christians. They have a rich and vast range of folk songs, dances and tales, as well as traditional musical instruments. Mandar, Nagara and

kartal are the main musical instruments. Their songs and music are changed according to seasons and festivals. Majority of Oraon who have converted to christianism write their title Kerkatta, Xalxo, Xaxa, Xesss, Tirkey, Kujur, Minz, Indwar, Kindo, Kistoper, Lakra etc.

**Table 3.4** List of forest villages with their composition.

Sl. No.	Name of Forest village	Total No. of Family	No. of Agreement holders Family	No. of Family belongs to							
				R	O	S	M	G	N	B	OT
1	Lehra village	31	13	-	-	31	-	-	-	-	-
2	Suni village	27	7	27	-	-	-	-	-	-	-
3	Garo Basti	216	71	87	93	-	-	5	31	-	-
4	Pumpu Basti	41	14	-	7	-	2	-	32	-	-
5	Bamni Bsati	15	6	-	1	5	-	-	7	-	2
6	Gadhadhar	257	71	187	27	33	-	-	-	-	10
7	Panijhora	41	21	13	2	2	13	-	5	-	6
8	Kalkut	98	42	-	-	-	30	-	-	-	58
9	Poru (N)	135	54	135	-	-	-	-	-	-	-
10	Poru (S)	78	27	78	-	-	-	-	-	-	-
11	Garam (West)	34	17	-	18	5	-	-	-	-	11
12	Garam (East)	110	33	-	-	10	61	-	-	-	39
13	Nimati & Dabri	115+15	30+5	85	-	-	-	-	-	-	45
14	Gangutia	68	23	-	-	-	-	-	68	-	-
15	Adma	64	13	-	-	-	-	-	-	64	-
16	Raimatang	81	22	-	-	-	-	-	80	-	1
17	Pana	86	41	-	-	-	-	-	86	-	-
18	Bhutri basti	50	23	-	-	-	-	-	68	-	-
19	Gudamdabri	142	71	-	-	-	40	-	12	-	90
20	Dalbada	45	19	-	-	-	-	-	33	-	12
21	20 <sup>th</sup> Mile	58	11	54	-	3	-	-	1	-	-
22	21 <sup>st</sup> Mile	23	9	-	-	20	-	-	-	-	3
23	Bhutiabasti	72	31	-	-	-	-	-	40	-	32
24	Sankosh	98	44	-	-	-	-	-	30	68	-
25	Newlands	40	12	-	12	-	-	-	17	11	-
26	Kumargram	56	28	-	-	-	-	-	13	43	-
27	Balapara	40	17	-	-	3	32	-	5	-	-
28	Khutimari	99	22	35	-	-	-	-	54	10	-
29	Bengdoba	56	25	12	-	17	-	-	27	-	-
30	Indu basti	37	10	-	-	-	37	-	-	-	-
31	Lapraguri	52	11	45	7	-	-	-	-	-	-
32	Tiamari	34	10	-	2	3	-	-	8	-	21
33	Shiltong	144	27	120	11	-	-	-	13	-	-
34	Chipra	44	14	44	-	-	-	-	-	-	-
35	28 <sup>th</sup> Mile	51	27	-	-	-	-	-	46	5	-
36	29 <sup>th</sup> Mile	25	10	-	-	-	-	-	17	8	-
37	Lepchakhawa	86	40	-	-	-	-	-	15	71	-
38	Chunabati	70	18	-	-	-	-	-	6	64	-
39	Sanrabari	96	20	-	2	-	-	-	84	10	-

Note: R=Rava, O=Oraon, S=Santal, M=Mech, G=Garo, N=Nepali, B=Bhutia/ Dukpa, OT= Others,

Source: 9<sup>th</sup> working plan, 2008-09 & Tiger conservation plan, 2016-17 to 2026-2027

### **3.3.2 Relationships with forest**

Forests provide significant social and economic benefits at all levels, especially in developing countries. Economics of people living in forest and fringe area have traditionally been dominated by subsistence agriculture. Forest villagers are totally depends on the forests for firewood, small timber, grazing and Non-Wood Forest Products (NWFP). Now villagers used to be employed in timber harvesting and plantation work for more than 100 days in a year through Joint Forest Management (JFM) scheme. Fringe villagers and tea garden labourers are also dependent on forests for wood, small timbers, thatch grass, cattle grazing and collection of NWFPs to a considerable extent. Villagers also depend on some rivers and streams such as Rydak, Sankosh, Gadhadhar, Pana for irrigation and for fishing. Landless and marginal farmers get employment as a daily labour in different forestry and panchayet development works. Some persons among tea garden and fringe villagers are involved in illegal felling of timber and poaching. This leads to occasional conflicts with forest officials.

### **3.3.3 Villagers economy and occupation**

Villagers residing in and around the forests are very poor in all sense. There is no industry except tea. Subsistence agriculture, horticulture is the main occupation and majority of the families is small and marginal farmers. Most of the families have less than 3 acre land where they gave huge labour force for livelihood. Villagers follow the traditional agricultural practices. Irrigation facilities are totally absent, few of them arrange own self and majority of the agriculture lands are mono-cropped. The existing source of employment that shown in the area is forest plantation works, annual felling and thinning coupes, cane products, soil conservation and river bank dam construction, fishing in rivers, honey and other NWFP collection, labour works in tea gardens, boulder collection, livestock rearing etc. The main seasons of considered as unemployment are winter and rainy. Villagers maintain large number of cattle and most of them are scrub cattle. Cow dung is used mainly for manure in agriculture field. For fuel wood villagers depends on forest besides some fuel also comes from agricultural wastes. Vocations of villagers living and around the forest are agriculture, animal husbandry and agro-based, forestry-based cottage industries. Number of regularly employed is very little, except school teaching, there is little scope of getting job. Few are engaged in banking, cottage industries and some are in private and business. Tea gardens labour gets job from April to November and other December to March is lean period where few are engaged. During this lean period tea garden and fringe people also

depends on cutting firewood from forest. There are 37 saw mills including 5 veneer mills in the vicinity. There are 279 recognised firewood dealers and 85 furniture shops operating around this District forest (Das, 2000). Moreover villagers migrated to the Bhutan, Meghalaya, Arunachal Pradesh and Assam in search of work.

### **3.4 Anthropogenic intervention in forest**

In the present study attempt has been made to collect the information on anthropogenic intervention on forests. For that purpose the researcher looks on the subject of collection of NTFPs, illegal activities on forests, livestock grazing, forest fire, wildlife health attack etc.

#### **3.4.1 Illegal activities**

Illegal cutting of trees, illegal removal of firewood & NWFP, poaching of wild animals, boulder collection, illegal grazing and encroachment are the main illegal activities in Buxa Tiger Reserve and surrounding forests area of the District.

##### **3.4.1.1 Poaching**

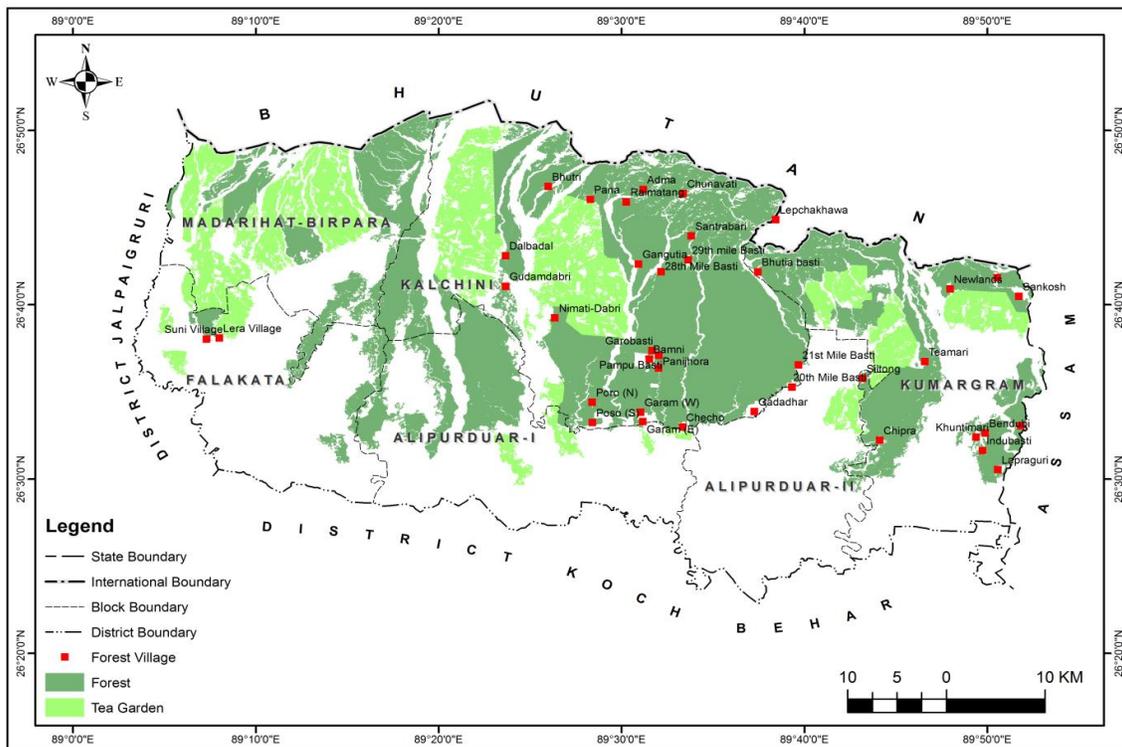
Poaching is one of the illegal activities in BTR due to its peculiar location. Its northern boundary runs along Bhutan and eastern boundary with Assam, international boundary with Bangladesh is 20 km away from its southern boundary wild animals in BTR are vulnerable to poaching. Currently, elephants are most susceptible to poaching. From 1991 to 2013, total 23 animals were poached in Alipurduar District (table 3.5). Labourers mainly from nearby tea estates are reported to indulge in poaching for deer, wild boar, jungle fowl, etc. It is suspected that poaching of bears for their bile & gallstones takes place in Jaigaon. Fishing also takes place in Rydak, Gholani, Dhawla, Poro & other rivers. It is also suspected that poachers enter BTR through Indo-Bhutan boundary (65 km, open boundary). As the Indo-Bhutan boundary is inaccessible due to hilly terrain (outer Himalayas), effective patrolling lacks. During 1994, three elephants were poached by Arunachal tribes in S. Rydak Range. They poached by arrow poisoning (vegetative poison). One male elephant calf was poached in 1997 at Tashigaon for supplying “two small tusks with jaw” by specific order from Bhutan.

**Table 3.5** Year-wise poaching of wildlife in BTR, Alipurduar District.

Sl. No.	Year	Species	No. of Animals
1	1991	Elephant	-
2	1992	Elephant	1
3	1993	Elephant	1
4	1994	Elephant, Pangolin	3
5	1995	Elephant	1
6	1996	Elephant, Chital Bison, Leopard	3
7	1997	Elephant	1
8	1998	Sambar	1
9	2005	Leopard	1
10	2006	Elephant, Barking deer	1
11	2007	Sambar	1
12	2008	Spotted deer	1
13	2009	Wild boar, Hill myna	4
14	2010	Tortoise	1
15	2011	-	-
16	2012	Baisan, Spotted deer, Wildboar	1
17	2013	Elephant	2
<b>Total</b>			<b>23</b>

Source: Tiger conservation plan, 2016-17 to 2026-2027

In the figure 3.3, the location of tea gardens as well as forest covers shown clearly where it is noticed that most of the tea gardens boundary are attached with forest which means tea gardens labours have an intervention to the forests for livelihood needs.



**Figure 3.3** Location of forest, forest village and tea gardens.

The table 3.6 shows the details of tea gardens as well as their inhabitants and cattle population. There are huge number of human and cattle population. This population directly and indirectly involved in forest resource extraction, besides for livestock rearing tea estate villagers totally depend on nearby forests.

**Table 3.6** Name and location of tea estate situated near BTR

Sl. No.	Name of Tea Estate	J.L No.	Population		Sl. No.	Name of Tea Estate	J.L No.	Population	
			Human (1991)	Cattle (1991)				Human (1991)	Cattle (1991)
<b>BTR, East Division</b>									
<b>Kumargram ps</b>					<b>Kalchini p.s</b>				
1	Phaskhawa T.E	2	1096	600	17	Nimtjhora T.E	11	4014	1234
2	Chuia Jhora T.E	3	2237	865	18	Atiabari T.E	41	5538	1858
3	Kartick T.E	4	4140	1073	19	Bhatkhawa T.E	40	5927	1431
4	Rahimabad T.E	5	3061	1166	20	Rajabhat T.E	42	3696	826
5	Jainti-I T.E	6	4601	1545	21	Dima T.E	39	4906	1012
6	Jainti-II T.E	8	937	450	22	Gangutia	38	4500	972
7	Turturi T.E	9	2163	2200	23	Kalchini T.E	37	11998	2959
8	Rydak T.E	10	6492	1766	24	Bhatpara T.E	36	8037	1466
9	Newlands NewT.E	31	5581	2580	25	Chupara T.E	33	6337	1681
10	Kumargram T.E	33	5291	1225	26	RadharaniT.E	32	1203	431
11	Sankosh T.E	34	5709	1920	27	Madhu T.E	18	4573	790
<b>Alipurduar ps</b>					28	Dalsinghpara T.E	23	12226	2514
12	Kohinoor T.E	120	2070	994	29	Bharnabari T.E	22	5682	1621
13	Dhawla Jhora T.E	118	2907	1152	30	Torsa T.E	24	4354	811
<b>BTR, West Division</b>									
14	Patkapara T.E	39	3914	1900	31	Satali T.E	19	4906	1012
15	Majherdabri (E) T.E	58	2272	891	32	Rangamati T.E	30	7604	2578
16	Srinathpur T.E	81	1232	485	33	Raimatang T.E		3673	1001
					34	Mechpara T.E	35	5742	1359

Source: Management-cum-working plan of BTR, 2000

### 3.4.1.2 Illegal cutting of trees

It's a common illegal activities and a serious problem in forest area of Alipurduar District. The forest offences recorded during the period of 1993-1994 to 2012-2013 and quantity of timber seized in both the divisions of BTR is given in table 3.7. The most valuable areas are Bhutri, Bharnabari, Rangamati, parts of Raimatang along T.E., Dima, Poro, Nimati, Gadadhar, parts of Panbari, parts of SRVK, Chuniajhora, Raydak & Newlands. There are many saw mills, veneer

mills and furniture shops present in Alipurduar, Kalchini (Jaigaon) & Kumargram P.S. and adjoining areas. A part of illicit timber is sold to these mills. A part of these, illicit timbers goes to Coach Behar, Dinjata & Baxirhat and even to Bangladesh. A part is going to Bhutan through Jaigaon. Timber mafias are very active in this region. They mislead poor villagers into the act.

**Table 3.7** Offence cases & illegal timber seized in BTR

Year	BTR, West Division				BTR, East Division				Total no. of offences in BTR	Total quantity of timber seized (m3)
	No. of offence			Quantity of timber seized (m3)	No. of offences		UDOR	Quantity of timber seized (m3)		
	COR	POR	UDOR		COR	POR				
1993-94	218	21	512	760.913	---	---	---	---	751	760.913
1994-95	261	19	538	647.112	---	---	---	---	818	647.112
1995-96	169	26	625	670.153	---	---	---	---	820	670.153
1996-97	73	3	364	523.12	281	27	648	696.742	1396	1219.862
1997-98	56	30	1188	1175.8	459	16	653	797.437	2402	1973.237
1998-99	90	108	1476	1173.767	318	11	815	1190.565	2818	2364.332
2005-06	70	44	1003	1182.03	329	116	964	1431.97	2526	2613.98
2006-07	76	29	1046	1572.89	311	21	745	1119.69	2228	2692.58
2007-08	87	43	1182	1426.23	287	13	777	942.07	2389	2368.30
2008-09	98	37	1058	1050.43	218	17	731	1006.52	2159	2056.95
2009-10	86	25	1322	1381.77	181	19	887	1264.13	2520	2645.9
2010-11	65	39	1440	1219.6	230	15	1004	1618.26	2793	2837.86
2011-12	147	34	2099	2841.0	188	23	983	1455.75	3474	4296.7
2012-13	78	21	1584	1736.2	235	14	984	1534.70	2916	3270.9
Total	1574	479	15437	17361.02	3037	292	9191	13057.83	30010	30418.78

Source: Tiger conservation plan, 2016-17 to 2026-2027.

Firewood is collected by people not only for their own use but also for sale in local markets. For this purpose they even fill green trees. Removal of timber from forest by wood poachers is done by 'Thela' & river rafting. Truck is rarely used. Firewood is removed by head load, cycle & thela. During rainy season most of the areas of BTR become inaccessible due to the presence of water current flow of numerous rivers & streams. River rafting of illegal timbers is a common feature in BTR. Although later two permanent river camp of Sankosh & Rydak and 4 temporary river camps on Poro, Dima and Gholani rivers operate to check river rafting during rainy season.

### 3.4.1.3 Illegal removal of NTFPs

The NTFPs collection by FPCs/ EDCs members is legally permissible as per Govt. order. But there is no definite harvesting procedure for it. The FPCs/ EDCs members, many tea garden labourers are also involved in its collection. Lot of thatch is collected from grasslands for

thatching roofs. Due to cutting of thatch unscientifically, grassland habitat is destroyed. Many birds including Bengal florican lay eggs and rear chicks in these grasslands. Illegally many people enter into the forest for collection of simul floss and decorative fungi (cheu) and thereby create a lot of disturbance to wild animals including birds in their natural habitat.

#### **3.4.1.4 Illegal boulder collection inside of forest**

Alipurduar sub-division is situated in the flood plain of many rivers & streams. Lot of boulder & bed materials are required annually by the irrigation department, P.W.D., railways & panchayets for soil conservation, bed protection, road side protection etc. works. Boulder is also available in rivers flowing through Buxa Tiger Reserve, Titi forest and other forests. Legally boulder collection permission is not given to anybody from 1996-97 to protect natural flows of rivers, to control of river bank erosion of forest. There is some illicit collection of surface boulder and bed material. Smuggling of BTR boulders to these parts is also in evidence which enhanced soil erosion and flash flood surrounding of forest.

#### **3.4.2 Domestic livestock grazing**

As per rules no grazing allowed inside the forests. Nevertheless the reserve forest suffers from illicit grazing. It is most severe in Rangamati, Bharnbari, Bhutri, Raimatang, Nimati, Poro, Damanpur, Checko, Gadadhar, Rydak, Newlands, Sankosh & Bholka block. The reserve forest has 46 fringe villages, 34 tea gardens, 37 forest villages and 4 F.D holding hamlets in and around it. These villages and tea gardens have approximate 1.5 lakh domestic livestock (table 3.7 and 3.9). Fair percentage of these graze illegally inside the forest grazing during dry season (March-April) affects habitat quality severely. The domestic cattle compete directly with the wild herbivores for fodder. They share the common water holes with the wild animals. So, there is a fair chance of dissemination of cattle borne diseases (Anthrax, FMD, HSBQ, etc.) to the wild animal.

#### **3.4.3 Forest fire**

Fire is not uncommon in BTR. The occurrence of the fire particularly in the month of January to April is common in foothill areas above 23<sup>rd</sup> mile towards North and in areas occupied by pure teak plantations. The vulnerable areas are Bhutanghat, Phaskhawa, Santrabari, NRVK, Raimatang blocks also the riverine tract of Rydak blocks and grasslands of Narathali, Marakata

& Bholka blocks. Illicit fellers, grazier, thatch collectors & other NWFP collectors knowingly/ unknowingly lit the fire. Sometimes poachers lit fire to expose the wild animals.

### **3.4.3.1 Type of fire**

Crown fire is not reported from BTR except in few patches in hilly tract of Tashigaon lock. Ground fire is common in BTR from January to April every year.

### **3.4.3.2 Causes of fire**

In Buxa Tiger Reserve the reason for forest fire is purely men-made either deliberately or accidentally. Following are the main reasons of forest fires in this District.

#### **3.4.3.2.1 Fire due to grazers**

The cowboys or cattle grazers lit fire in forest. Sometimes these grazers deliberately fire the areas to get new flush of grasses. It is estimated that near about one lakh cattle graze in BTR every day. Lot of cowboys enters into the forest with those cattle. They are serious source of fire hazards.

#### **3.4.3.2.2 Fire due to pedestrians**

Large number of forest paths is used by local people for their day to day activities. While passing through the forest, knowingly/ unknowingly they throw the burning butts of cigarette/ bidis, causing fire to forest.

#### **3.4.3.2.3 Fire due to poachers**

Poachers who set fire in the forest areas have two aims in their minds:

- i. To deviate attention of forest department staff from targeted timber felling areas to other areas, so that staff gets involved in fire fighting giving them access to targeted areas.
- ii. To flush out wild animals from forest, for easy hunting.

#### **3.4.3.2.4 Fire due to NWFP collectors**

Fire is also being caused by forest produce collectors especially by people who collect “Phooljharu”, as by fire clearing the area; they get, fresh/ flush of Phooljharu and also an increased growth of the same for their business.

### 3.4.3.3 Fire affected areas

Most fires affected areas in BTR are the north of 23<sup>rd</sup> mile, mainly Bhabar & hilly tracts. The survey conducted by M.P.O. & Ecology of BTR in 2016 reveals the following facts as stated in Table 3.8. Total fire affected areas in BTR is 2045 (27 % of total BTR). Most affected ranges are Jainty, Rjabhatkhawa (West), Santrabari and North Rydak.

**Table 3.8** Burnt category-wise affected ranges in BTR showing devastation percentage.

Range	Affected area (Ha)	Affected compartments	Total % burnt	Burnt percentage in affected class				
				0 -20 %	21-40 %	41-60 %	61-80 %	81-100 %
<b>BTR, West division</b>								
Pana	378	AD-1,4;Pana-1,4;RTG-2,3,9	1.85	1.09	0.75	0	0	0
Hamiltonganj	1005	GDB-1,3;BNB-1,2,3,4;BH-1,2,3,4,5	4.92	1.66	1.56	1.69	0	0
East Damanpur	1346	CH-5,6,7,8,9;GD-1,2,3,4,5,6;DPO-3,4,7,8	6.59	0.77	3.39	0	0	2.41
West Damanpur	1081	PORO-5,7,10;DPO-1,2,5,6,9	5.29	1.04	2.39	1.85	0	0
East Rajabhatkhawa	478	PANA-4,5;PAN-6,10;SRVK-11,14	2.34	0.86	0.66	0.80	0	0
West Rajabhatkhawa	1215	SRVK-1,2,7,8,10,15;DIMA-1,2,3,4	5.95	0.26	3.35	0	0	2.33
Nimati	2218	NMT-1,2,3,4,5,6,7;SRVK-9,16;PORO-1,5,6,7,11	10.86	0	2.36	3.34	1.24	3.91
<b>BTR, East division</b>								
Jainty	4562	NRVK-5,6,7,12,13,14;TGN-1,2;JNT-1,2,3,4,8,9;PH-2,3;CHU-RF	22.34	0	0.58	7.50	4.62	9.63
Buxaduar	3288	TG-1,2,3;NRVK-1,2,3,4,8,9;STB-1,2,3,4;CHU-2,3	16.1	1.54	2.57	3.09	4.64	4.24
Bholka	1449	SB-1,2a,2b,3a,3b,4,5,6;NB-1,2,3,4,5	7.09	0.08	5.41	0	0	1.60
South Rydak	1102	NRT-1,2;MKT-2,3,4;SR-1,2,3,6,7;DH-1,2	5.39	0.84	1.60	2.94	0	0
North Rydak	1772	HP-1,2;JH-1;BHT-1,2;NRD-1,2,3;CR-1,2,3,4,5,6,7	8.67	3.61	2.35	0	2.71	0
Kumargram	521	NR-3;KGM-1,2;SNK-1,2,3	2.55	1.57	0.97	0	0	0
<b>Total</b>				<b>13.36</b>	<b>28</b>	<b>21.24</b>	<b>13.23</b>	<b>24.14</b>
<b>Ranking</b>				<b>IV</b>	<b>I</b>	<b>III</b>	<b>V</b>	<b>II</b>

Source: Tiger conservation plan, 2016-17 to 2026-2027.

### 3.4.4 Wildlife health attack

Foot & Mouth Disease (FMD) & Anthrax are pathological diseases. No case has been recorded for FMD. During 1994 one (1) bison & four (4) elephants died due to anthrax in BTR. This was the first incidence of anthrax outbreak. Entire North Bengal is affected. These diseases are transmitted through domestic cattle. Cattle in fringes are regularly immunized against these.

#### 3.4.4.1 Illegal trade in wildlife and wildlife products

This study was conducted under the West Bengal forestry project by Wildlife Protection Society of India (W.P.S.I.), New Delhi during 1996-97. This study covered BTR study aimed at compiling wildlife offences in the past, identifying extent and routes of illicit wildlife trade etc. in North Bengal. Findings of study relevant to BTR are emergence of North Bengal as a crucial trade route in wildlife articles. Wildlife articles from Assam too pass through North Bengal. Proximity of such trade routes to BTR exposes it to great danger of poaching. The study identifies tiger skins & bones, leopard skins & bones, ivory, rhino horn, bear bile, reptile skins, clouded & snow leopards, lesser cat skins, deer skins, turtle & tortoise, orchids & medicinal plants as the major wildlife products that are traded. A total of 27 elephants have been poached during 1979-1997, where 15 were poached in BTR. Substantial seizures have also been done in BTR (Table 3.9).

**Table 3.9** Seizures of elephant products in West Bengal during 1979-1997

Species	Location	District	Item seized	Quantity seized
Elephant	Calcutta	Calcutta	Ivory articles	243 pcs. + 2.28 kg
			Ivory carving	6 pcs. + 0.15 kg
			Raw Ivory	40.4 kg
	Cooch Behar	Cooch Behar	Raw Ivory	9.45 kg
	Baikunthapur	Jalpaiguri	Raw Ivory	6.1 kg
	Buxa Tiger Reserve		Raw Ivory	24.295 kg
			Bones (carved as tusk)	6 pcs
			Tusks	2 pcs
	Other divisions	Murshidabad	Raw Ivory	15 pcs
				Raw Ivory

Source: Tiger conservation plan, 2016-17 to 2026-2027.

#### **3.4.4.2 Threatened on monitor lizards**

Shri Brij Bhushan Sharma-a scientist of Jiwaji University, Gwalior (M.P.), carried out a survey of monitor lizards in Buxa Tiger Reserve (BTR) during August 1994 under MOEF project “Conservation status survey of monitor lizards in India” (Das, 2000). He has reported the presence of three species of monitor lizards in BTR viz.-Bengal Monitor Lizard (*Veranus Bengalensis*), Yellow Monitor Lizard (*Veranus Flavescens*) and Water Monitor Lizard (*Veranus Salvator*). The forests areas near rivers and wet lands in east Rajabhatkhawa, S. Rydak, Kumargram and Nimati Range have been indicated as potential areas for monitor lizard. Now monitor lizards are threatened. They are killed for skin. Yellow Monitor Lizard is included in Schedule I, while Bengal Monitor and Water Monitor Lizard are included in Part-II of Schedule II of the Wildlife (Protection) Act, 1972.

#### **3.4.4.3 Men-animal conflict**

Human-wildlife conflict can be defined as any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life, on the conservation of wildlife populations, or on the environment (Manoj, K., et al., 2013). ‘During 2011-12, in West Bengal, a compensation of Rs 3.20 crs. had to be paid against 71 human casualties, 317 injuries, 311 death of cattle or cattle lifting, damage of 4283 huts & crop damage over 5285 hectare’(Das, 2013). Forest habitat loss largely taken place due to human interferes and changes in land use pattern in the present study area. Fragmentation and loss of natural corridors of animals are main cause for man-animal conflict regularly. Bio-diversity is continuously threatened due to loss of forest habitats. Habitat loss has led to decline in several species, like otter, Bengal jackal, pangolin, mongoose, porcupine which are not frequently sighted today here and there. The forest of Duars was an extremely rich bio-diversity zone but today facing challenging moment due to man-animal conflict. Declining one-horn rhino population, political violence in the entire Duars, Jhum-cultivation, tea garden extension etc. are responsible for disturbance of its bio-diversity. Besides incidences of elephants being hit by speeding trains in their migratory corridors are some of the very burning issues and challenges. Conversion of forests cover area into agricultural and habitat land, land acquisition has become a serious issue. The fringe area villagers are least concerned about preserving the forest ecosystem as they are mostly tribal communities and less educated. The conflicts among human and wild animals such as elephant, tiger, leopard,

monkeys, gaur, wild boar, crocodile, rhino etc. have become a regular scenario in this place. In table 3.10 details of elephant death by speeding trains is given below.

**Table 3.10** No. of elephant death by broad gauge speeding trains in BTR.

Sl. No.	Date	Time of incident	Division	Location	Sex of animal	No. of animal killed
1	04.06.96	23.00 PM	BTR, West	Adjacent forest	Adult female	1
2	09.06.01	00.45 AM	BTR, West	T.E	Adult female	1
3	28.05.06	19.30 PM	BTR, West	T.E	Adult makna	1
4	11.04.07	4.40 AM	BTR, West	Forest	Adult makna	1
5	09.11.07	1.20 PM	BTR, West	Forest	Male calf	1
6	15.01.08	4.30 AM	BTR, West	Forest	Male calf	1
7	03.06.10	2.08 AM	Garopara, BTR	Corridor	Sub-adult male	1
8	03.06.10	5.00 AM	BTR, West	Forest	Female	1
9	05.01.13	18.14 PM	BTR, West	Forest	Three adult male, one female	4
10	05.03.13	6.40 AM	BTR, West	Forest	Tusker	1
<b>Total</b>						<b>13</b>

Source: Tiger conservation plan, 2016-17 to 2026-2027.

### 3.5 Forest products and their utilization

There are 39 forest villages within or nearby forests and the forest area bordering by either agricultural land or tea estates. As a result huge number of population consists of hunting, rearing, cultivator or tea estate labours that have different kinds of demands from the forests. Besides a sophisticated section of the nearby urban and semi-urban population also require some quantities of timber for construction of house and for furniture. The Jalpaiguri, Alipurduar, Kochbehar and Siliguri are the main markets for major forest product. The produce of this forest has a very ready and established market particularly for sal and teak. The major marketable products are structural wood, plywood, box wood, fuel wood, benches and minor produces. There are innumerable saw mills in the periphery of the forest and these mills have a good demand of timbers.

Besides 34 tea gardens are situated in the vicinity of the forest area and they have well demand of firewood, house construction and house post, agricultural equipment, thatch etc. The produce of the forest mainly timber is exported not only to Calcutta and Bihar but also sent to the Bhutan, Bangladesh and to the some areas in the Northern India. In the 19<sup>th</sup> century the Indian

Railway bought large number of timber for sleepers of railway lines. The entire production of the plywood timber is also very saleable and a few factories situated in the Duars and Siliguri consume the plywood. Presently plywood is allotted to West Bengal plywood and Allied Products Ltd (WBPAPL). The match wood timber is purchased by the Western India Match Co. (WIMCO) of Calcutta. There is also a very keen demand for Khair trees for manufacture of Katha. The entire produce of fire wood is readily taken by the neighboring tea estates and yet their demands are not completely fulfilled. At present the demand for each and every produce, both major and minor, is more than the supply, and as a result there is no problem for the disposal of the produce and the other hand accelerate deforestation, lacking of density of trees increasing.

### 3.5.1 Structural wood

The sal timber has been recognized as the best structural wood since long time past for purposes where strength and durability are the prime considerations. Sal timber is the most important and maximum revenue earning produce of the forest. The list of timber of depots and their location is given in the table 3.11. Through this depot all kind of out turn of timber are arranged. Before 2000, railways sleepers of various sizes were sawn by the purchasers and largely by the Government saw mill, Siliguri, for supply to the Indian Railways.

**Table 3.11** List of timber depots with location.

Sl. No.	Name of Depot	Location
1	Godamdabri	Godamdabri Office campus
2	Hamilton	Pana Range Office campus
3	Nimati	Nimati Range Office campus
4	Rajabhatkhawa	West Rajabhatkhawa Range Office campus
5	Damanpur	Damanpur Range Office campus
6	Poro	East Poro Beat Office campus
7	Gadadhar	Gadadhar Beat Office campus
8	Jainty	Jainty Range Office campus
9	Buxa Road	Buxa Road Beat Office campus
10	Karticka	North Rydak Range Office campus
11	Samuktala	South Rydak Range Office campus
12	Marakata	Marakata Office campus
13	Kamashyaguri	Kamakshyaguri Mobile Range Office campus
14	Barobisha	Bholka Range Office campus
15	Shil Bungalow	Barobisha Beat Office campus
16	Chengmari	Chengmari Beat Office campus
17	Kumargram	Kumargram Range Office campus

Source: Management-cum-working plan of BTR, 2000

### **3.5.2 Plywood**

In recent years the plywood and veneer industry has come to limelight amongst the wood-based industries. The present trend of demand in the market is for strong, durable and light timber. As a result the veneer industry has earned immense popularity in the market so far the furniture; decorative paneling and flush doors etc are concerned.

### **3.5.3 Bamboo and cane**

The bamboo is called 'poor man's timber' due to its less price and versatile utility and distribution of bamboo is mainly restricted to Santrabari, Tashigaon, Adma, Lera and Suni block of the forests. There are other areas where bamboo is available, such as Chunabati block, Dandapani block, Topgaon block and Bhutanghat etc. To regulate cutting and to afford rest for further growth, a cutting cycle of 5 years had been adopted and the programme of bamboo cutting in the entire District had been drawn up on that basis. Presently no bamboo extraction is done. Cane holds an important place in the tea industries as it is used for basket making. Some quantities of cane are being exposed for making furniture and other home and kitchen articles. Canes are available mainly in Nimti, Poro, Damanpur, Checko, Panabari, SRVK, S. Rydak and Dalgaon block. To regulate cutting and afford rest for further growth a cutting of cycle have been adopted and like bamboo the programme of cane cutting in the entire District have been restricted on that basis.

### **3.5.4 Firewood collection**

Large quantity of firewood is required annually the forest villagers, neighbouring tea estates and fringe population for industrial and domestic use. This demand was earlier met from the clear felling coupes by allotting areas to each tea estate. Normally the entire area ear-marked for a particular tea estates are not allotted all at a time. Only a portion of the area is allotted at first. Further area would allot only when the already allotted area is completely workout. The following table 3.12 will give an idea about the firewood demand of tea gardens situated in the fringe of the forest area. Besides table 3.13 (Appendix D) will depict details of out turn of timber and firewood in different forest blocks.

Forest villagers for their daily firewood need, go inside the forest and collected it according to their needs. Mainly they used the dead trees, dry branches, wind fallen produces etc. Sometimes they illegally cut small trees/ branches and collect it after drying. Mainly women folk

and children do this work. Illegal collection of firewood sometimes reaches to the extent that younger plantation are being damaged.

**Table 3.12** Requirement of firewood of 15 tea gardens (out of 34) during 2009-2010 located in the fringes of BTR.

Name of Gardens	Daily rated workers @2.5 stacks per worker/annum	Monthly rated workers @ 3 stacks per worker/annum	Monthly rated workers & Tech. C @ 4 stacks per worker/annum	Clerical & medical staff & tech. A & B @ 12 stacks per worker/annum	Manag erial, hospital & other stacks	Total domes tic use stacks	Factory use stacks	Total requir ement stacks
<b>BTR, West Division</b>								
Atiabari	2790	150	552	0	560	4020	500	4520
Bhatpara	2787	537	292	336	12	3964	0	4146
Bhatkhawa	2750	0	680	360	463	4253	200	4265
Chuapara	2042	273	312	84	484	2737	12	3137
Nimtijhora	1847	48	440	276	176	3096	400	3176
Dima	3155	189	60	0	124	3580	80	3680
Kalchini	3744	63	664	312	12	4907	100	4907
Paktapara	1450	276	36	156	304	1930	0	1935
Rajabhat	1452	240	40	280		2316	5	2316
TOTAL BTR(W)						30803	1297	32100
<b>BTR, East Division</b>								
Jainti	1370	448	56	36	46	1956	0	4838
Kartick	1210	180	52	228	2900	4570	2882	5020
Phaskhawa	452	93	24	96	450	1115	450	3176
Sankosh	2367	0	552	248	2226	5393	2061	5591
New Lands	2040	312	52	0	246	2650	198	2848
Rydak						3333	2061	5394
Total BTR(E)						19017	7652	26867
<b>Grand Total</b>						<b>49820</b>	<b>8049</b>	<b>58967</b>

Source: Tiger conservation plan, 2016-17 to 2026-2027.

### 3.5.5 Non -Timber Forest Produces (NTFPs)

As per the forest working plan prescription, collection of Minor Forest Produce (MFP) or Non-Timber Forest Produce (NTFP) of any kind was allowed from any part of the forests but no quarry for sand, gravel and stone should be made without previous approval of the Divisional Forest Officer or local range or beat officer. There are many NTFPs available in the forests of this study area but no systematic study was conducted regarding the quantity of NTFPs available and its regeneration status. There is no definite extraction procedure adopted for its collection.

Forest villagers go inside the forest and collect NTFPs according to their demand. The chief NTFP items which are collected by villagers are Cane fruits, Purundi fruits, Pan leaves, Naglata, Lycopodium stick, Totola pods and Seeds, Golden and Sponge mushrooms, Odal fruit, Fern bud, Mahogany floral axis, Lali fruit, Simul floss and Floral axis, Broom stick, Thatch etc. There are many medical herbs in this forest region. Some are collected by the villagers who are used to remove fever, bone fracture join etc. A large number of forest villagers were interviewed by foresters (Sri Tapan Katham) to assess the items of NTFPs and other details. As seen in the forest report of the project plan of 2000, 43 species have been used for collection. Almost 50 % are the tree species. The second most important category is climbers. A total of 624.05 metric tons of NTFP has been collected. The market price in the primary market is over Rs. 26.00 lakhs. But foresters/ exporter sell at more than four times of that price of villagers.

**Table 3.14** Collection of NTFPs from forest during 1999-2000

Nature of plants	No. of species used	Quantity Collected (Metric ton)	Value of collection at primary collector's level (Rs. Lakh)	Value of exporters level (Rs. Lakh)	%	Remarks (Species)
Climber	9	30.60	4.90	11.87	11	Satmula, Manjito, Bantarul, Gila, Sikakai, Dhundhal, Jangli San, Bet.
Shrub	5	25.25	2.33	15.33	15	Jangli sojna, Ulta, Kamal, Hartaki, Hydrocical etc.
Tree	20	231.20	11.36	51.19	48	Jarul, Lotka, Pata, Chilauni, Chikrasi, Narkeli, Sal, Tinfali, Ritha, Simul, Bohera, Odal, Phata lali, Gota lali, Dalchini, Kowla, Lampata, Amloki Etc.
Grass	3	310.00	2.40	3.70	4	Kucho, Kans, Thatch etc.
Others	6	27.00	5.10	23.90	22	Includes Orchards, bamboo, mushrooms, and edible herbs.
<b>Total</b>	<b>43</b>	<b>624.05</b>	<b>26.09</b>	<b>105.99</b>	<b>100</b>	

Source: Tiger conservation plan, 2016-17 to 2026-2027.

Inflorescence is collected from 7 species. The account for 28 % of the total value and collection of other plant parts are quite small. Almost 3/4<sup>th</sup> collection of NTFP from 20 different species is for decorative purpose. Dyes, Resins, Detergents along with species are also collected from 8 species. Medicinal NTFP is collected from 6 species and it constitutes 6 % of the total value at exporter's level. In this connection it can be said that 'NTFPs, especially medicinal

plants, rattans and bamboos are the alternative sources of income for these people' (Sarmah, 2010).

**Table 3.15** Collection of NTFPs from forest during 1999-2000

Utility class of NWFP collected	No. of species used	Quantity collected (Metric tons)	Value at primary Collection level (Rs. in Lakh)	Value at Exporter's level (Rs. in Lakh)	%	Remarks
Decorative purpose	20	204.00	10.88	77.19	73	For selling
Edible products	4	36.00	3.30	5.35	5	Local use
Commercial products (Dyes, Resins, Detergents)	6	53.00	4.45	9.25	9	For selling
Household utility products ( Grass, thatch, Bamboo)	5	310.00	4.00	6.95	7	Local use
Medicinal products	6	20.85	3.45	6.85	6	Mostly selling
Species	2	0.20	0.01	0.40	-	selling
<b>Total</b>	<b>43</b>	<b>624.05</b>	<b>26.09</b>	<b>105.99</b>	<b>100</b>	

Source: Tiger conservation plan, 2016-17 to 2026-2027.

### 3.6 Conclusion

In this study it is clear that it is a mini store house of bio-diversity for which tourists very often visit Duars. Some pockets of wilderness have been reserved carefully where wild animals can wander without disturbance. These are Jaldapara wild life sanctuary, Buxa wild life sanctuary & tiger reserve, Titi forest, Rhiti forests, Dalgaon forests, Dhumpara & Bhalka forests. Within these forest environments, forest villagers are resided since their ancestors' period where a major proportion of the villagers comprises of scheduled tribes (ST) among them Nepali Rava and Santhal community is proportionally higher than others. The villagers residing in and around the forests are economically poor. They practicing subsistence agriculture, horticulture and others are engaged as agriculture labour, marginal worker, and tea garden labour. Although agriculture is the main livelihood support, but inhabitants are finally depends on the forests since it provides significant economic benefits for forest villagers, especially for tribal communities. However, non-timber forest products (NTFPs) is playing vital role to provide income and subsistence living. Such Non-Timber Forest Products are fuel wood, timber, medicinal plants, tree leaves, wild edible routes, fruits, vegetables; house building materials etc which are integral part of day-to-day livelihood activities for forest villagers. But due to some large scale anthropogenic legal and illegal pressure such as collection of NTFPs, forest cutting, grazing, forest fire, wildlife health attack etc. are giving a question on imbalance of bio-diversity. Therefore there are men-

animal conflicts especially men with leopards and elephants conflicts occurred frequently. Due to this reason many villagers afraid to go inside the forest for NTFP collection. Besides the wild animals attack their fields and damage their crops. Villagers admitted that they lived in a constant fear of encountering wild animals and very agitated in letting their family members outside alone. In the end, it can be said that presently NTFPs are more and more importance as it is creating more employment and income generating opportunities to the economically downtrodden forest villagers. So with the increasing of scientific and sustainable way of harvesting of NTFPs, the financial bad condition can be increased to some extent. At the same time, it will also reduce their over dependency on wood and timber collection which might be efficient to resolve the problem of forest degradation of this area.

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